REMARKS/ARGUMENTS

Responsive to the Office Communication dated July 7, 2006, Applicant has amended the subject application to address each of the grounds of claim rejection raised by the Examiner as well as to address other objections raised by the Examiner. Claims 1 – 34 were pending in the original application. Pursuant to a restriction requirement, Claims 4-5 and 22-34 were previously withdrawn from consideration. Election of Claims 1, 2 and 6-21 was made without traverse. In Amendment A filed on or about May 19, 2006, Applicant cancelled Claims 1,2, 12 and 20 and offered new Claim 35 while amending Claims 6-8, 10-11 and 15-17. Claims 6-11, 13-19, 21 and 35 were pending and were rejected in the Office Communication of July 7, 2006.

Claim Rejections Under 35 U.S.C. § 112

The Examiner rejected Claim 35 under 35 USC §112 first paragraph as failing to comply with the written description requirement. The Examiner has asserted that the Claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor at the time the application was filed had possession of the claimed invention. However, applicant respectfully submits that this claimed subject matter is disclosed in paragraph [0020] of the pre-grant publication document. Paragraph [0037] teaches that the invention includes "a control system (See Fig. 2) containing necessary control equipment for varying heating source energy at a program power level or coating surface temperature (**14**) for an appropriate processing time. All necessary control circuits (**11**), for delivering pulsing signals to the energy source to maintain the desired power temperature level (**6**)." The disclosure thus teaches that the control system is adapted to vary the heating source energy in accordance with coating surface temperature or a program power level. Paragraph [0054] and [0055] of the pre-grant publication also disclose monitoring the temperature of the work piece or the coating surface. Applicant respectfully submits that monitoring temperature by means of a temperature detector, wherein this

information is transmitted to the controller for the purpose of varying the heating source energy (Paragraph [0037]) supports the subject matter in the rejected claim, namely, "analyzing the treatment of coating on the coated articles and subsequently controlling treatment of the coated articles in accordance with the previous analysis."

But notwithstanding Applicant's belief that the specification satisfactorily teaches the claimed subject matter, Applicant has deleted Claim 35 and substituted Claim 36 in which the rejected language is replaced by the claim limitation "a programmable controller for controlling heating energy introduced to the coated article." This claim limitation is more clearly supported in the specification including in Paragraph [0037] of the pre-grant publication document ("Also included is a control system ... containing necessary control equipment for varying heating source energy ..."), and Paragraph [0030] ("The energy source may be programmed for power level set, or coating surface temperature "closed loop" control.").

Applicant further notes that "controllers," which may be programmable to control heating energy sources in response to preprogrammed instructions or an input command signal (such as a temperature value) as set forth in the disclosure of the present invention would be readily understood and able to be practiced by one of ordinary skill in the art.

The Examiner's suggestion that the recitation is considered new matter which lacks support from the originally filed application is unclear. Applicant notes that this recitation was disclosed in Paragraph [0020] of the pre-grant publication document and was in the original claims of the application as filed. Thus Applicant does not believe that any portion of the recitation in previous Claim 35, now Claim 36, constitutes new matter lacking support in the originally filed application. Indeed, as noted in Amendment A, Claim 35 was essentially the combination of Claims 1 and 2 of the original patent application with a modification to the description of the infrared heating energy source. The particular element objected to now was contained in original Claim 2.

The Examiner further rejected Claim 35 under 35 USC §112 second paragraph as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as his invention. The Examiner has cited a lack of a positive antecedent basis. As noted, Applicant has canceled Claim 35 and substituted Claim 36, which it believes has no such lack of antecedent basis as alleged.

In light of the arguments presented above concerning Claim 36 and the cancellation of Claim 35, Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC §112 first and second paragraphs.

Claim Rejections Under 35 U.S.C. § 103

Claims 35, 6-11, 14-19 and 21 were rejected under 35 USC §103(a) as being unpatentable over Rudd (U.S. 5,901,462) in view of Anderson (U.S. 5,124,552).

Applicant would like to address Anderson first. The Examiner has proposed that Anderson discloses "at least one infrared heating energy source ... selectively programmable to produce short, medium, and long wave length infrared energy." Applicant respectfully disagrees that Anderson teaches an infrared heating energy source that is selectively programmable to produce short, medium, and long wave length infrared energy. Anderson teaches an infrared web moisture sensor which comprises "a source of infrared radiation for directing an infrared beam through the web and an infrared detecting unit on the other side of the web which measures the transmission of the infrared beam through the web at three separate wavelength regions." (See Abstract.) Anderson notes that "the transmission in the first wavelength region is primarily sensitive to the moisture content of the web. The transmission in the second wavelength region is less sensitive to the moisture comment. The transmission in the third wavelength region provides an indication of the web temperature." (See Abstract.) Anderson notes that "the water and web fibers absorb certain wavelengths of the infrared spectrum more effectively than other wavelengths so that their absorption peaks and valleys at various wavelengths along the

spectrum. Moreover, these peaks and valleys shift to shorter wavelengths with increases in web temperature and to longer wavelengths with decreases in web temperature." In referencing prior art U.S. Patent No. 4,928,013, Anderson notes that the infrared absorption peak for water is about "1.93 microns." Anderson goes on to note, with respect to the '013 patent that "As the web temperature increases, the intensity of detected infrared radiation increases at the long wavelength *side* of the pass band filter, while an approximately equal decrease in the detected infrared occurs at the opposite short wavelength *side* of the pass band." (Emphasis added.)

It is evident from the disclosure, that Anderson is concerned with the spectrum surrounding the infrared absorption peak of water. This is evident by the fact that the filters which are taught as detecting infrared energy which passes through the web are selected to have a detection range from 1.680 to 2.050 microns. This range of 1.68 to 2.05 microns falls squarely within the medium wavelength infrared range which extends from about 1.4 to about 3 microns. Long wavelength infrared extends from about 3 to about 8 microns and short wavelength infrared extends from about 0.78 to about 1.4 microns. There is nothing in Anderson which would suggest or teach an energy source selectively programmable to produce short, medium and long wavelength infrared energy. Anderson teaches the detection of infrared energy in a very select range of wavelengths, which all fall in a medium wavelength infrared spectrum.

Not only does Anderson not teach an infrared energy source capable of being selectively programmable to produce short and long wavelength infrared energy, but there would be no purpose in Anderson for providing such an infrared heating energy source. Short and long wave infrared wavelengths are beyond the scope of what would be detected by the apparatus in Anderson and are beyond the scope of what would be thought useful for the purpose that Anderson is trying to achieve. Applicant respectfully disagrees with the Examiner's characterization of Anderson which refers merely to the "long wavelength side" and the "short wavelength side" of the band pass filter and to "shorter wavelengths" and "longer wavelengths" of infrared energy. These disclosures are not equivalent to suggesting that Anderson teaches an infrared energy source which produces short, medium, and long wavelength infrared energy.

These merely reflect direction along the spectrum. Anderson does not, therefore, teach the element of Claim 36 of "one infrared heating source ... selectively programmable to produce short, medium and long wavelength infrared energy."

The Examiner has also cited Rudd (U.S. 5,901,462) as disclosing at least one infrared heating energy source, at least one UV heating energy source, conveying means, programmable recording controller and a temperature monitor. As noted by the Examiner, Rudd does not teach an infrared energy source that is selectively programmable of short, medium and long wavelength infrared energy. Moreover, Rudd does not teach a temperature monitor for detection of the article temperature. A central distinction between the invention of the subject application and Rudd is that the present invention transmits energy from the infrared energy source to the article itself – the article being a coated substrate. In Rudd, heat is directed to a heat conductive roll **332** over which a substrate passes. "The substrate is supported about a thermally conductive roll having a plurality of energy emitters disposed within the conductive roll along the length of the conductive roll." See Abstract. Energy is thus transmitted to the roll and then absorbed from the roll into the substrate. See Column 23, Lines 8-10. Rudd specifically discloses that its invention includes "means for sensing the temperatures *of the roll* along the length of the conductive roll ..." (See Abstract (emphasis added)). Later, Rudd notes "Temperature sensors **409** further enable precise control of the surface temperature along the roll **332** to control the amount of heat delivered to substrate **12**." See Column 23, lines 47-49. As noted the claims of the subject invention requires a temperature monitor for detection of the article temperature. This is not taught in Rudd. The distinction reflects the difference in the manner in which energy is transmitted into the substrate. Rudd teaches the conveyance of energy into a roller, which energy then is absorbed into the substrate, which must be in contact with the roller in order to effectively transmit heat. Thus, the temperature of the roller is the subject of control in Rudd. Applicant's invention relies on direct transmission of energy into the substrate and the coating. Thus, monitoring the temperature of the substrate or the coating of the article is preferable to monitoring an ansulary or associated component within the larger apparatus (namely, the roll).

Applicant further notes that because Rudd mandates use of a thermally conductive roll having energy emitters disposed within the roll which transmit energy to the roll which is then conducted into the substrate, it is necessary that the substrate maintain contact with the roll in order to provide adequate heat absorption. Based on the Rudd design, this mandates the use of flexible substrates having the capacity to maintain contact with a circular roll. Applicant's device has no such limitation and teaches its application to coatings applied to various work piece materials including "metal, wood, paper, plastic, glass, and ceramics." The Rudd device simply would not work with glass or ceramics or metal, or wood or plastic substrates having any thickness. The substrates simply would not follow the contour of the conductive roll. Thus, one looking to create a pilot test system having flexibility for use with a variety of substrates and coatings would not look to Rudd as suitable art given the obvious limitations in the design of Rudd.

In light of the arguments presented above, most notably the argument that neither Rudd nor Anderson nor any other prior art reference cited in the Office action recites an apparatus having all of the limitations set forth in Claim 36 including the infrared heating energy source that is "selectively programmable to produce short, medium, and long wavelength infrared energy," Application respectfully submits that Claim 36 overcomes the prior art reference combination of Rudd and Anderson and that this claim should be allowed.

The remaining claims in the present application are allowable for the limitations therein and for the limitations of the claims from which they depend.